

Appendix B

Form for Recording the Results of a Facility Screening

LLNL Facility Screening Report (SCR)	
Lead Preparer: _____	Date Performed: _____
Facility Description	
Briefly describe facility location, structure and attach a building layout: 	
Define facility type: Check: <input type="checkbox"/> Single Structure or Area: (B/Tr/A) _____ <input type="checkbox"/> Complex of Buildings: Designation _____ <input type="checkbox"/> Segment* of Bldg or Complex: _____ Seg.# ____ *Attach justification for segmentation	Owner Organization: Directorate: _____ Facility AD: _____
Final Facility Classification: (Check) <input type="checkbox"/> LSI <input type="checkbox"/> Low <input type="checkbox"/> Moderate <input type="checkbox"/> High <input type="checkbox"/> Nuclear Facility <input type="checkbox"/> Accelerator	
Concurrence Signatures: Lead Preparer: _____ Date: _____ AB Section Leader or designee: _____ Date: _____ ES&H Team Leader or designee: _____ Date: _____	
Approval Signature: Facility Management: _____ Date: _____	
Supporting Documentation Appended Check as appropriate: <input type="checkbox"/> Justification for Segmentation <input type="checkbox"/> Chemical Hazard List <input type="checkbox"/> Radiological Hazard List <input type="checkbox"/> Explosive Hazard List <input type="checkbox"/> Building Layout	Comments:

Identification of Operations, Inventories, and Hazards

List key operations that are conducted within the facility:

Did Facility Management receive any notifications of credible external threats from nearby facilities? yes ☐ no ☐

If yes, list the following for each notification:

Source Facility:

Facility Contact(s):

Phone # (s):

Describe Hazard(s):

Hazard Identification Table

Check the hazard types found in the facility.

Not Found

Found

☐

9

Biological Hazards

Complete block I, below

☐☐

Chemical Hazards

Complete block II, below

1

1

Explosive Hazards

Complete block III, below

1

☐

Radiological Hazards

Complete block IV, below

1

1

Industrial Hazards

Complete block V, below

<p>I. Biological Hazards</p> <p>Check BioHazard Type</p> <p><input type="checkbox"/> Non-Select Agents Check highest group in facility: <input type="checkbox"/> RG1 Agents <input type="checkbox"/> RG2 Agents <input type="checkbox"/> RG3 Agents</p> <p><input type="checkbox"/> Select Agents Select highest group in facility: <input type="checkbox"/> RG1 Agents <input type="checkbox"/> RG2 Agents <input type="checkbox"/> RG3 Agents</p> <p><input type="checkbox"/> Other BioHazards (e.g., Blood, nucleic acid, lab animals, contaminated needles/sharps, animal/human tissues)</p> <p>Biological Safety Level (BSL) Circle highest level in facility: N/A BSL-1 BSL-2 BSL-3</p>	<p>II. Chemical Hazards</p> <p>Check ChemHazard Type</p> <p><input type="checkbox"/> Flammable, volatile or fuming <input type="checkbox"/> Toxic materials (acutely toxic, toxic, systemic toxin, toxic gases) <input type="checkbox"/> Corrosives/irritants <input type="checkbox"/> Reactive materials (e.g., air/ water sensitive; pyrophoric; thermally, shock, or friction sensitive; perchlorate) <input type="checkbox"/> Carcinogens, mutagens, reproductive hazards <input type="checkbox"/> Pesticides <input type="checkbox"/> Beryllium <input type="checkbox"/> Materials of special concern (e.g., alkali metals, fluorine, asbestos, lead, mercury, PCB) <input type="checkbox"/> Other regulated metals (e.g., chromium, copper, nickel, zinc) <input type="checkbox"/> Other: _____</p> <p>For chemicals that exceed LSI classification, attach maximally planned chemical inventory listing. Listing attached? <input type="checkbox"/> YES <input type="checkbox"/> NO</p>
<p>III. Explosive Hazards</p> <p>Check</p> <p><input type="checkbox"/> Primary High Explosives <input type="checkbox"/> Secondary High Explosives <input type="checkbox"/> Propellants/Low Explosives <input type="checkbox"/> Firearms Ammunition</p> <p>Do any of the explosive types checked above have any of the following associated hazards?</p> <p><input type="checkbox"/> Fragmentation Hazards (Primary Fragments) <input type="checkbox"/> Group L Explosives</p> <p>Attach maximally planned inventory listing for each explosive type checked.</p>	<p>IV. Radiological Hazards</p> <p>Check Sum of Ratio</p> <p><input type="checkbox"/> <1 of RQ thresholds (40 CFR 302.4 Appendix B) <input type="checkbox"/> >1 of RQ thresholds < Cat. 3 Thresholds (DOE-STD-1027-92, Table A.1) <input type="checkbox"/> >Cat. 3 Thresholds (DOE-STD-1027-92, Table A.1) < Cat. 2 Thresholds (DOE-STD-1027-92, Table A.1)</p> <p>Does facility contain the following? Radiation Generating Devices: <input type="checkbox"/> Radiation generating devices not covered by DOE O 420.2A (e.g., X-rays, Electron Beams, Radiography Equipment): class ____ <input type="checkbox"/> Radiation generating devices covered by DOE O 420.2A (Accelerators).</p> <p>Exempted materials: <input type="checkbox"/> Radioactive Certified Sealed Sources <input type="checkbox"/> Rad. In Type B Containers with current certificates of compliance <input type="checkbox"/> Either in quantities > Cat. 3 thresholds (DOE-STD-1027-92, Table A.1)</p> <p>Attach listing of maximally planned radiological materials inventory.</p>

V. Industrial Hazards					
Check if hazard present	Industrial Hazard	Examples of industrial hazard(s) for each general category. (Circle Industrial Hazards found unless majority are present, then circle entire category and cross off items that don't apply.)	List industrial hazard(s) that could directly impact the public (fence-line) or colocated worker (100 m).		
	Electrical	Battery banks, cable runs, diesel generators, electrical equipment, heaters, high voltage (> 600V), motors, power tools, pumps, service outlets, fittings, switchgear, transformers, capacitors, magnetic fields, transmission lines, wiring/underground wiring, other:_____.			
	Thermal	Boilers, bunsen burner/hot plates, electrical equipment, electrical wiring, engine exhaust, furnaces, heaters, lasers, steam lines, welding surfaces, welding torch, other:_____			
	Kinetic	Acceleration/ deceleration, bearings, belts, carts/ dollies, centrifuges, crane loads (in motion), drills, fans, firearm discharge, fork lifts, gears, grinders, motors, power tools, presses/ shears, saws, vehicles, airplane, vibration, other:_____			
	Potential (pressure)	Autoclaves, boilers, coiled springs, furnaces, gas bottles, gas receivers, pressure vessels, vacuum vessels, pressurized system (e.g., air), steam header and lines, stressed members, other:_____			
	Potential (height/ mass)	Cranes/hoists, elevated doors, elevated work surfaces, elevators, lifts, loading docks, mezzanines, floor pits, scaffolds and ladders, stacked material, stairs, other:_____			
	Internal Flooding Sources	Domestic water, fire suppression piping, process water, other:_____			
Hazard Classification					
Circle the appropriate hazard level:					
Biological	Not found	LSI	Low		
Chemical	Not found	LSI	Low	Moderate	High
Explosive	Not found	LSI	Low	Moderate	High
Radiological materials	Not found	LSI	Low	Nuclear	
Radiation generators	Not found	LSI	Acc		
Industrial	Not found	LSI	Low	Moderate	High

Controls for LSI classified facilities: (Low, Moderate and High facility controls are addressed in Tier 2 or Tier 3 SBDs.)

Briefly describe controls developed to assure that facility operations do not exceed the facility classification:

Other controls?

Briefly describe:

List what document(s) through which the controls will be implemented:

Instructions for Completing Hazard Identification Table in Facility Screening Form

(Three pages, not part of screening form)

1.	Conduct a walk-through of the facility to verify information gathered (ensure no hazards overlooked), identify inconsistencies, and become familiar with operations and hazards.
2.	<p>For chemical hazards:</p> <ul style="list-style-type: none"> a. Review the chemical listing and summarize the general categories of chemicals in the attached Hazard Identification Table (e.g., acid, base, flammable). b. Determine the appropriate Q Value for each chemical. c. List all chemicals that exceed LSI criteria and attach. d. Determine if chemical inventories exceed the threshold quantity specified in 29 CFR 1910.119 (Process Safety Management); TQ threshold values. If above, follow requirements per this CFR 1910.119. (LLNL facilities typically establish thresholds well below these thresholds.)
3.	<p>For explosives hazards:</p> <p>Identify explosive inventory in terms of total quantities of each type respective to the United Nations Organization (UNO) Hazard Class/Division. This may include powder-actuated tools and ammunition used or stored at the facility.</p>
4.	<p>For radiological hazards:</p> <ul style="list-style-type: none"> a. Review the radiological listing and perform a sum-of-ratio calculation of the radionuclides to the following listings: <ul style="list-style-type: none"> i. 40 CFR 302.4, Appendix B ii. DOE-STD-1027-92 (Change 1), Table A.1, Category 3 thresholds b. If radiation generation devices (RGDs) are present, determine whether or not these meet the criteria for accelerators. Determine class of each RGD per Document 20.3, "LLNL Radiological Safety Program for Radiation-Generating Devices," in the <i>ES&H Manual</i>. c. Check whether exempted radiological materials are present within the facility.
5.	<p>For biological hazards:</p> <ul style="list-style-type: none"> a. Determine the desired maximum categories of biological agents within the facility (i.e., Select Agents, non-Select Agents and highest risk group agents associated with each). b. Determine if other biohazards are present or anticipated (e.g. blood, recombinant DNA, lab animals, contaminated needles/sharps, animal/human tissues). c. BSL level of labs within the facility, and the highest BSL permitted per the IBC. d. If Select Agents are present, then attach the Select Agent listing to this form.

6. For industrial hazard types:

Review facility operational documentation and consult facility representatives to determine the industrial hazards present or anticipated.

List industrial hazard(s) that could directly impact the public (fence-line) or colocated worker (100 m) or could serve as initiators to an event. See guidance below:

Industrial Hazard	Guidance for Screening SIH ¹
Household chemicals	Household products used in household quantities can be screened out.
X-Ray Equipment	Screen out (i.e., disregard for further analysis) those facilities with X-ray equipment or simple accelerators that are commercially available, conform to appropriate national codes and standards (e.g., ANS N537/NBS123 for X-ray equipment or ANS 43.1 for accelerators), and have not been modified with regard to safety-related design and operating features, such as voltage and shielding. If the X-ray system does not conform to the appropriate national code standard or the accelerator is considered "complex," it shall be identified for further HA. (See Section 2.6.2.3.2 of ANS 43.1, <u>Complex Accelerators</u> , for the definition of simple and complex accelerators.)
Flammable Materials	Considered as a contributor/initiator for fire events.
Lasers	Screen out Class 1 and 2 lasers and Class 3 lasers with enclosed beams (per ANSI Z136.1) because they do not represent a significant health threat. However, if these Class 1, 2, and 3 laser systems do not conform to the appropriate national standard, they shall be identified for further HA. Class 3 lasers with non-enclosed beams and Class 4 lasers are to be identified for further analysis. Gas supplies that are an integral part of an unmodified, sealed, purchased system do not have to be treated separately. However, gas supplies that are not sealed in a purchased system or systems that have been modified shall be considered separately (i.e., toxic material criteria). Replacing integral gas cylinders is not considered a modification.
Electrical	Screen out standard electrical hazards, but retain for further analysis those that represent special safety concerns. Systems to be retained are (1) those with 600 volts or more and 25 milli-amperes or more output, and (2) stored-energy systems with 50J or more stored energy and terminal-to-terminal voltage of 600 volts or more. The National Electric Code (NEC) 70-1990 identifies these as systems requiring special consideration.
Kinetic Energy	Many high kinetic energy systems are capable of causing worker injury. However, most of these (e.g., cars, trucks, forklifts, cranes) are standard industrial hazards (SIH) unless an initiator for another significant event. Unique systems (e.g., high energy flywheels, large centrifuges) are not considered SIH and are subject to analysis.

Industrial Hazard	Guidance for Screening SIH ¹
Pressure	High hydraulic pressures and pressurized gas bottles are SIH. Large volumes of compressed gases are not routine and cannot be screened out: Stored energy <0.1 LB, TNT Pressure > 3000 psig.
Temperature	Screen out high-temperature systems of which the only consequence is a contact burn. Keep for further analysis those systems that could result in a strong overpressure if a coolant or other fluid contacted the high-temperature mass, could cause toxic products if materials in the area were exposed to the high temperature, or could cause a fire that would spread radioactive or toxic materials. High temperature systems are SIH, but an evaluation is required if the temperature could result in an overpressure, create toxic products, or cause a fire. Temperatures that could act as an initiator cannot be screened out.
Asphyxiants	Asphyxiants do not have Threshold Limit Values (TLVs) and, therefore, cannot be handled as toxic materials and are considered SIH unless the following considerations apply. Identify for further analysis (1) areas that could entrap asphyxiants, (2) cylinders of compressed asphyxiants, and (3) situations in which the oxygen level would be less than 18% due to increased asphyxiant gas concentration.
Biohazards	Screen out common sources of biohazards (e.g., cooling towers), but facilities containing biohazards that require special industrial hygiene controls (e.g., protective clothing, breathing apparatus, special warning placards) should be retained for further analysis.

¹ The criteria in this table are provided to facilitate screening of obvious SIHs. Failure to satisfy these criteria does not rule out ultimately identifying a given hazard or sub-hazard as an SIH.

7. Use the information gathered and recorded in, or attached to, the Hazard Identification Table to compare with the classification criteria in Table 5, and determine the classification of each hazard and the overall facility classification.